CT Scanner Solutions Professional

Professional CT Scanner Conformity Analysis

Report Number:	AI-20250707-212459
Generation Date:	2025-07-07 21:24 UTC
Project:	Hospital Central CT Installation
Client:	Hospital Central
Site Location:	Hospital Central Room A
Scanner Model:	Neusoft Medical Systems NeuViz ACE
Analysis Type:	AI-Powered Professional Assessment
Report Status:	REQUIRES MODIFICATION
Conformity Score:	71.0%
Risk Level:	Medium

Executive Summary

■■ REQUIRES MODIFICATIONS - See Action Plan

Metric	Value	Status
Conformity Score	71.0%	■■
Risk Assessment	Medium	■■
Estimated Cost	$52,600	■■
Timeline Impact	55 days	■■

Detailed Technical Analysis

AI-Powered Analysis Results:

OVERALL CONFORMITY STATUS: REQUIRES_MINOR_MODIFICATIONS **CONFORMITY SCORE:** 85% - The installation site meets most of the requirements but requires minor modifications in radiation shielding and HVAC adjustments to fully comply with the Neusoft NeuViz ACE specifications and regulatory standards. **RISK ASSESSMENT:** Medium - While most site conditions are favorable, the lack of existing radiation shielding and potential HVAC adjustments present moderate risks that need addressing before installation. **DETAILED TECHNICAL ANALYSIS:** 1. **Dimensional Compliance:** - **Room Dimensions:** The room dimensions (7.2m × 5.1m × 2.8m) exceed the minimum requirements (6.5m × 4.2m × 2.43m), providing adequate space for the CT scanner and necessary clearance for service access. - **Access Route:** The door access (1.4m × 2.2m) is sufficient for equipment entry, considering the scanner dimensions (1.886 x 1.012 x 1.795). Ensure corridors are clear for transport. - **Workflow Optimization:** The room layout should be reviewed to optimize patient and staff movement, ensuring efficient workflow and safety. 2. **Structural Assessment:** - **Floor Loading:** The floor load capacity (2000.0 kg/m²) is adequate for the scanner weight (1120.0 kg). No additional reinforcement is required. - **Vibration Isolation:** Implement specialized anti-vibration mounts as per Neusoft specifications to minimize operational

vibrations. - **Anchoring:** Ensure proper anchoring as per manufacturer guidelines to maintain stability during operation. 3. **Electrical Systems:** - **Power Supply:** The existing triphasé 380V power supply is compatible. Ensure the electrical panel can handle the 50.0 kW power consumption. - **Grounding:** Enhance the earthing system to meet specialized grounding requirements, ensuring a power factor ≥0.84. - **Emergency Power:** Verify the availability of an emergency power source to maintain scanner operation during outages. 4. **Environmental Controls:** - **HVAC Adequacy:** The existing 15-ton medical-grade HVAC system should be evaluated to ensure it maintains the required temperature (18-24°C) and humidity (30-70% RH) levels. - **Airflow Management:** Adjust air conditioning to prevent direct airflow onto the patient table, following Figure 22 of the Neusoft manual. - **Noise Control:** Implement noise reduction measures to maintain a conducive environment for patient comfort. 5. **Radiation Safety:** - **Shielding Requirements:** Install primary and secondary barriers with appropriate lead equivalency to comply with IEC 60601-2-44 standards. - **Controlled Areas:** Designate controlled areas and implement radiation monitoring systems to ensure safety. 6. **Regulatory Compliance:** - **Permits and Codes:** Obtain necessary building permits and ensure compliance with local building codes and fire safety regulations. - **Accessibility:** Confirm ADA compliance, ensuring all modifications maintain accessibility standards. 7. **NeuViz Specific:** - **Compliance Check:** Ensure all installation and operational protocols adhere to NPS-CT-0651 Rev.B, including environmental and power requirements. **CRITICAL ISSUES IDENTIFIED:** - Lack of existing radiation shielding. - Potential HVAC adjustments needed for optimal environmental control. **ACTIONABLE RECOMMENDATIONS:** - **Immediate Actions Required:** - Install radiation shielding as per regulatory standards. - Conduct a detailed HVAC assessment and make necessary adjustments. - **Infrastructure Modifications:** - Implement anti-vibration mounts and enhanced grounding systems. - Adjust air conditioning to prevent direct airflow on the patient table. - **Regulatory Requirements:** - Secure necessary permits and approvals from local health and building authorities. - **Cost Optimization:** - Evaluate alternative shielding materials and HVAC solutions for cost-effectiveness. **PROJECT IMPACT ASSESSMENT:** - **Timeline Implications:** Estimated modification timeline is 30-45 days, considering the installation of shielding and HVAC adjustments. - **Budget Impact:** Estimated cost for modifications is approximately $20,000-$30,000, including shielding, HVAC adjustments, and compliance testing. - **Operational Considerations:** Plan for minimal disruption to existing operations during installation, with potential temporary relocation of services. **QUALITY ASSURANCE:** Conduct factory acceptance testing and site acceptance testing as per Neusoft protocols to ensure installation quality and operational readiness. **FINAL RECOMMENDATION:** Go - Proceed with installation after addressing identified modifications and ensuring compliance with all regulatory and manufacturer requirements.

Action Plan & Recommendations

1. **Vibration Isolation:** Implement specialized anti-vibration mounts as per Neusoft specifications to minimize operational vibrations.

2. **Anchoring:** Ensure proper anchoring as per manufacturer guidelines to maintain stability during operation.

3. **Power Supply:** The existing triphasé 380V power supply is compatible. Ensure the electrical panel can handle the 50.0 kW power consumption.

4. **Grounding:** Enhance the earthing system to meet specialized grounding requirements, ensuring a power factor ≥0.84.

5. **Emergency Power:** Verify the availability of an emergency power source to maintain scanner operation during outages.

6. **Airflow Management:** Adjust air conditioning to prevent direct airflow onto the patient table, following Figure 22 of the Neusoft manual.

7. **Noise Control:** Implement noise reduction measures to maintain a conducive environment for patient comfort.

8. **Shielding Requirements:** Install primary and secondary barriers with appropriate lead equivalency to comply with IEC 60601-2-44 standards.

9. **Controlled Areas:** Designate controlled areas and implement radiation monitoring systems to ensure safety.

10. **Permits and Codes:** Obtain necessary building permits and ensure compliance with local building codes and fire safety regulations.

11. **Accessibility:** Confirm ADA compliance, ensuring all modifications maintain accessibility standards.

12. **Compliance Check:** Ensure all installation and operational protocols adhere to NPS-CT-0651 Rev.B, including environmental and power requirements.

Cost Analysis & Budget Impact

Cost Category	Amount (USD)	Description
Initial Assessment	$3,000	Professional conformity analysis
Room Modifications	$19,840	Structural changes if required
Electrical Upgrades	$12,400	Power system modifications
HVAC Installation	$9,920	Climate control systems
Radiation Shielding	$4,960	Safety compliance
Project Management	$2,480	Coordination and oversight
TOTAL ESTIMATED	**$52,600**	**Complete project cost**

NeuViz ACE/ACE SP Specific Requirements

NeuViz Compliance Analysis (NPS-CT-0651 Rev.B):

Mandatory Requirements:
• Installation Engineer: Certified Neusoft engineer required
• Environmental Control: 18-24°C, 30-70% humidity, ±4.1°C/hour max fluctuation
• Power Requirements: 380V triphasé, power factor ≥0.84
• Floor Specifications: FC=1.7 x 10^3N/cm^2 minimum bearing capacity
• Transport: Specialized pallets with engineer supervision
• Grounding: Enhanced earthing system mandatory

AI Analysis Results:
NeuViz-specific compliance analysis completed per NPS-CT-0651 Rev.B requirements.

Additional NeuViz Costs:
• Neusoft Engineer: $8,000
• Specialized Transport: $6,000
• Enhanced Grounding: $15,000
• Total NeuViz Premium: $29,000

Regulatory Compliance Checklist

Compliance Item	Status	Notes
Room Dimensions	■	Space adequacy verified
Electrical Power	■	Power system compatibility
HVAC System	■	Climate control for equipment
Radiation Shielding	■■	Requires detailed assessment
Accessibility (ADA)	■	Disability access compliance
Fire Safety	■■	Local authority approval required
Building Permits	■■	Planning permission status
Insurance Approval	■■	Coverage verification needed

CT Scanner Solutions Professional
123 Medical District, Healthcare City
Phone: +1-555-0123 | Email: info@ctscannerservices.com
Website: www.ctscannerservices.com